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UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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*Ex parte* RAINER KARER,  
KASPAR EVERTZ,  
WOLFGANG MICKLITZ,  
HANS-JACOB FEINDT,  
PHILIPP ROSENDORFER, and  
PETER KOLLE

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Appeal 2009-1239  
Application 09/700,367  
Technology Center 1700

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Decided:<sup>1</sup> March 26, 2009

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Before EDWARD C. KIMLIN, TERRY J. OWENS, and  
CATHERINE Q. TIMM, *Administrative Patent Judges*.

TIMM, *Administrative Patent Judge*.

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<sup>1</sup> The two-month time period for filing an appeal or commencing a civil action, as recited in 37 C.F.R. § 1.304, begins to run from the Decided Date shown on this page of the decision. The time period does not run from the Mail Date (paper delivery) or Notification Date (electronic delivery).

## DECISION ON APPEAL

Appellants appeal under 35 U.S.C. § 134(a) from the Examiner's decision rejecting claims 1-4, 6-8, 10, and 16-23. We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM-IN-PART.

## STATEMENT OF THE CASE

The invention relates to a gas-phase fluidized bed reactor for polymerizing ethylenically unsaturated monomers having a circulation gas line from the top of the reactor to a region of transition in a lower section of the reactor chamber. (Spec. 1, ll. 4-12). In the region of transition, there is either no gas distributor plate, a gas distributor plate with gas orifices covering more than 20% of the total surface area, flow reshapers, and/or a flap or slide for preventing polymer particles from falling back into the circulation gas line when the compressor is shut off. (Spec. 1, ll. 9-15; 3, l. 9 to 4, l. 7; 4, l. 39 to 5, l. 5). Claims 1, 4, 7, and 16 are illustrative of the subject matter on appeal:

1. A gas-phase fluidized-bed reactor for polymerizing ethylenically unsaturated monomers, which comprises

- a single reactor chamber (1) in the form of a vertical tube which has a region of transition in the lower section of the tube, followed by a reaction zone which is followed by a calming zone (2) in the upper section of the tube,

- a circulation gas line (3),

wherein the circulation gas line is connected to the lower section of the reactor chamber,

wherein the circulation gas line is directly connected to the upper section of the reaction chamber, and

wherein the circulation gas line is adapted to convey a reaction gas from the calming zone to the region of transition, and

- a circulation gas compressor (4) and a cooling device (5), the circulation gas compressor (4) and the cooling device (5) being sited in the circulation gas line (3),

wherein the region of transition is adapted for transitioning the reaction gas from the circulation gas line into the reactor chamber, and wherein the region of transition is designed such that either no gas distribution plate is present, or such that only a gas distributor plate is present which has a total surface area and has gas orifices, and wherein said gas orifices occupy more than 50% of the total surface area of said gas distribution plate, and

wherein the gas-phase fluidized-bed reactor has no internal heat exchanger in the reactor chamber.

4. A reactor as claimed in claim 1, wherein flow reshapers are sited in the region of transition of the reaction gas from the circulation gas line into the reactor chamber in order to reshape the flow pulse of the incoming gas, said reshapers being arranged so as to bring about substantially homogeneous introduction of the gas flow into the fluidized bed.

7. A reactor as claimed in claim 1, which further comprises a closable flap situated in the region of transition from the circulation gas line into the lower section of the reactor chamber which flap is adapted to prevent the penetration of polymer particles into the circulation gas line when the compressor is switched off.

16. A gas-phase fluidized-bed reactor for polymerizing ethylenically unsaturated monomers, which comprises

- a single reactor chamber (1) in the form of a vertical tube said reactor chamber consisting essentially of a region of transition in the lower section of the tube, followed by a reaction zone which is followed by a calming zone (2) in the upper section of the tube,

- a circulation gas line (3), wherein the circulation gas line is connected to the lower section of the reactor chamber, wherein the circulation gas line is

directly connected to the upper section of the reaction chamber, and wherein the circulation gas line is adapted to convey a reaction gas from the calming zone to the region of transition, and

- a circulation gas compressor (4) and a cooling device (5), the circulation gas compressor (4) and the cooling device (5) being sited in the circulation gas line (3),

wherein the region of transition is adapted for transitioning the reaction gas from the circulation gas line into the reactor chamber, and wherein the reactor chamber has, in the region of transition, either no gas distribution plate or has a gas distribution plate having a total surface area and gas orifices which occupy more than 50% of the total surface area of said gas distributor plate, and wherein the gas-phase fluidized-bed reactor has no internal heat exchanger in the reactor chamber.

Appellants request review of the rejections under 35 U.S.C. § 103(a) of claims 1, 3, 4, 6, 10, 16, 18-20, and 23 over U.S. Patent No. 6,413,477 B1, issued July 2, 2002, to Govoni et al. (“Govoni”) and of claims 7, 8, 21, and 22 over Govoni in view of U.S. Patent No. 2,636,712, issued April 28, 1953, to Lubbock (“Lubbock”).

With respect to the first rejection, Appellants initially present arguments to all the rejected claims as a group (App. Br. 6-11) and subsequently present separate arguments for claim 16 (App. Br. 11-12) and for claims 4 and 19 as a group. (App. Br. 12-13). Thus, with respect to the first rejection, we decide this Appeal on the basis of representative claims 1, 4, and 16. *See* 37 C.F.R. § 41.37(c)(1)(vii) (“When multiple claims subject to the same ground of rejection are argued as a group by appellant, the Board may select a single claim from the group of claims that are argued together to decide the appeal with respect to the group of claims as to the ground of rejection on the basis of the selected claim alone.”). We also address all the claims of the second rejection collectively.

## I. Claim 1

### A. ISSUE ON APPEAL

Appellants contend that claim 1 would not read on a reactor having two polymerization zones, as taught by Govoni, because, in reciting “a single reactor chamber,” *only one* reactor chamber must be utilized for polymerizing all the ethylenically unsaturated monomers. (App. Br. 7-9). Appellants also contend that line 3 (and corresponding lines 21 and 71 of Figs. 2 and 3) taught by Govoni are not “gas circulation lines” as claimed, but are “polymerization zone interconnecting lines adapted to facilitate discharge of polymer from the first reactor [1; 35 in Fig. 2; 61 in Fig. 3] to the separator [4; 22 in Fig. 2; 72 in Fig. 3]” (App. Br. 10) and that one of ordinary skill in the art having Govoni, would not consider line 6 (36 in Fig. 2; 81 in Fig. 3) to be a “circulating gas line” that is “directly connected” to the upper section of a reactor chamber as claimed. (App. Br. 11). The Examiner contends that line 3 (and corresponding lines 21 and 71) as taught by Govoni forms a portion of a “circulating gas line” to the same extent that the portion of line 3 that extends between the upper section of the reactor and the cyclone (or separator) in Figure 1 of Appellants’ Specification is a portion of a “circulating gas line” as claimed. (Ans. 6-7).

A first issue on appeal arising from the contentions of Appellants and the Examiner is: (a) have Appellants shown that the Examiner reversibly erred in construing the term “a single reactor chamber” and (b) have Appellants shown that the Examiner reversibly erred in finding that line 3 and line 6 as taught by Govoni together constitute the claimed “circulation gas line”?

### B. FACTUAL FINDINGS

The following Findings of Fact (FF) are relevant to deciding the above identified issue on appeal:

1. Figure 1 of Appellants' Specification (see, for example, Figure 1 provided below) shows that "[a] circulation gas line (3) is connected to the upper section and the lower section of the reactor chamber [1] . . . [and] is equipped with a cyclone (3a) to separate off polymer and catalyst particles from the circulation gas." (Amendments to Specification filed by Appellants on March 31, 2005).

Figure 1 of Appellants' Specification is reproduced below:

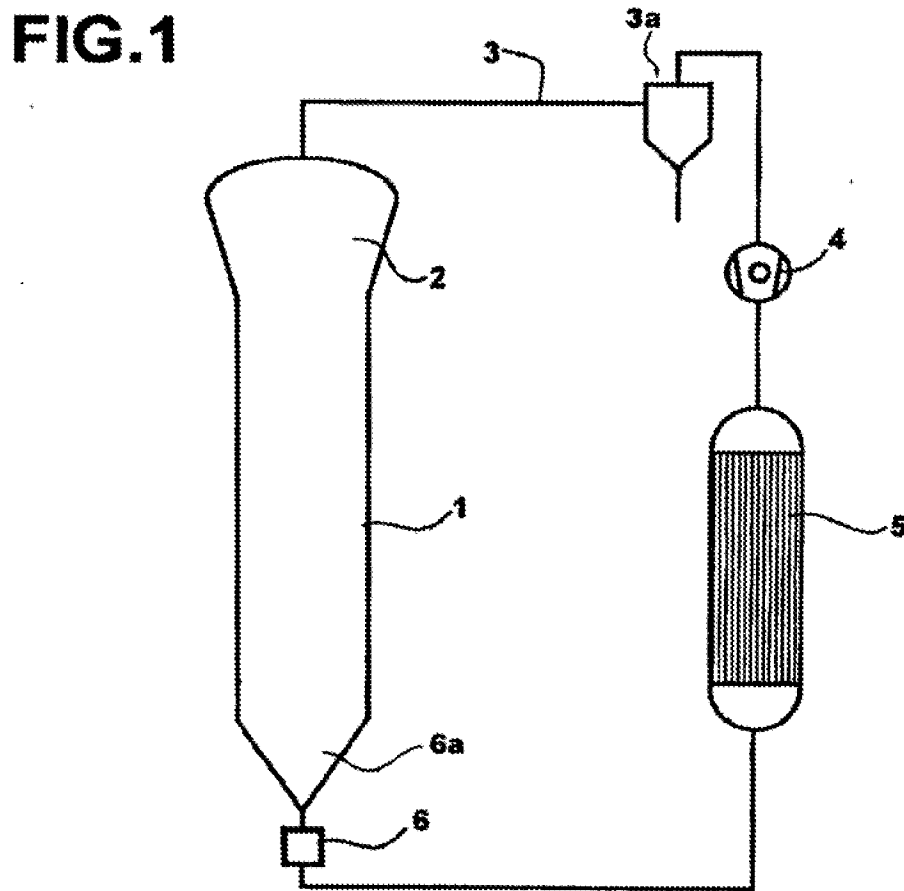


Figure 1 depicts, in a schematic view, an exemplary gas-phase fluidized bed reactor without a gas distributor plate. (Spec. 1:15-16; Amendments to Specification filed by Appellants on March 31, 2005)

2. Appellants' Specification provides no additional disclosure indicating an outlet for polymer particles other than via cyclone 3a. (*See generally* Spec.)

3. Figure 1 of Govoni (see, for example, Figure 1 provided below) teaches that "[t]he two polymerization zones 1 and 2 are appropriately interconnected by the sections 3 and 5." (Govoni, col. 5, ll. 66-67).

Figures 1, 2, and 3 of Govoni are reproduced below:

Fig. 1

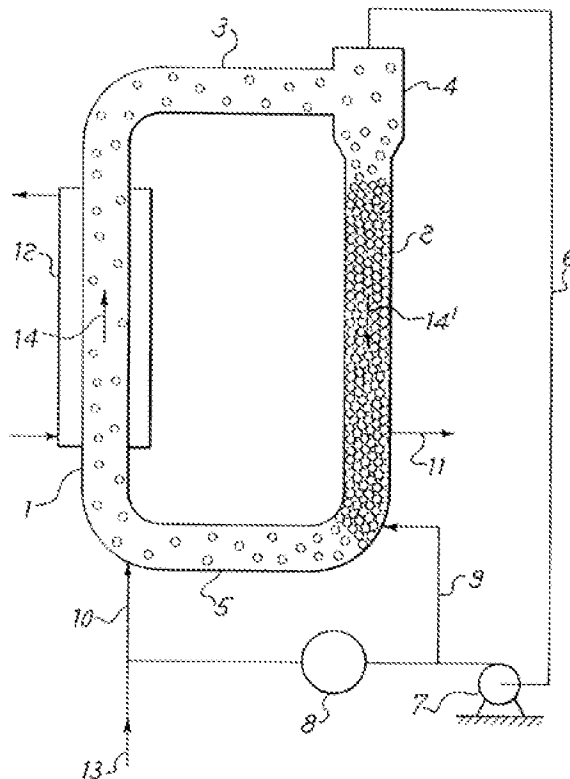


Figure 1 depicts a diagrammatic representation of a process for the gas-phase polymerization of olefins carried out in two interconnected polymerization zones. (Govoni, col. 1, ll. 7-9; col. 5, ll. 54-55).



Fig. 2

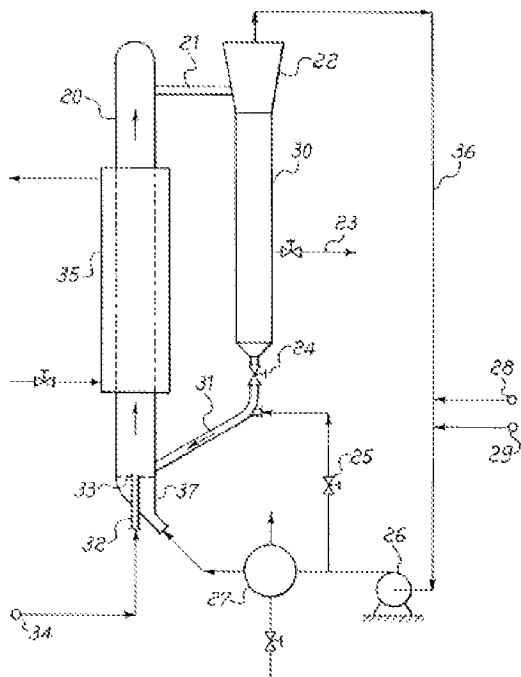
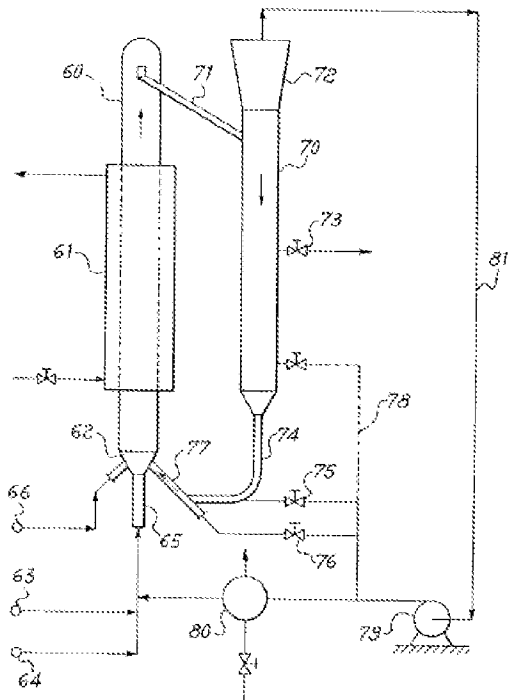


Fig. 3



Figures 2 and 3 depict diagrammatic representations of a first embodiment and a second embodiment, respectively, of the process of Figure 1.

(Govani, col. 5, ll. 56-60).

4. Govoni teaches that “the polymer and the gaseous mixture leaving the first polymerization zone 1 are conveyed to a solid/gas separation zone 4.... From the separation zone 4, the polymer enters the second polymerization zone 2.” (Govoni, col. 6, ll. 25-34).

5. Govoni teaches that polymer is discharged at line 11, which is within polymerization zone 2 and downstream from the solid/gas separation zone 4. (Govoni, col. 6, l. 2; Figure 1)

6. Govoni also teaches that the gaseous mixture leaving the separation zone 4 is compressed, cooled and transferred via recycle line 6. (Govoni, col. 6, ll. 34-41).

### C. PRINCIPLES OF LAW

During examination, "claims . . . are to be given their broadest reasonable interpretation consistent with the specification, and . . . claim language should be read in light of the specification as it would be interpreted by one of ordinary skill in the art." *In re Am. Acad. of Sci. Tech. Ctr.*, 367 F.3d 1359, 1364 (Fed. Cir. 2004). A drafter uses the term "comprising" to mean "I claim at least what follows and potentially more." *Vehicular Techs. Corp. v. Titan Wheel Int'l, Inc.*, 212 F.3d 1377, 1383 (Fed. Cir. 2000).

"On appeal to the Board, an applicant can overcome a rejection by showing insufficient evidence of prima facie obviousness or by rebutting the prima facie case with evidence of secondary indicia of nonobviousness." *See In re Kahn*, 441 F.3d 977, 985-86 (Fed. Cir. 2006) (emphasis omitted).

In evaluating the prior art references for a suggestion, it is proper to take into account not only the specific teachings of the references, but also any inferences which one skilled in the art would reasonably be expected to draw therefrom. *In re Preda*, 401 F.2d 825, 826 (CCPA 1968). From the prior art a certain amount of knowledge can be imputed to one of ordinary skill in the art. How that knowledge is stated is of no matter: It need not be conveyed directly nor must it be the main topic of discussion within a particular prior art reference. *See In re Heck*, 699 F.2d 1331, 1333 (Fed. Cir. 1983) ("The use of patents as references is not limited to what the patentees describe as their own inventions or to the problems with which they are concerned. They are part of the literature of the art, relevant for all they contain.") (quoting *In re Lemelson*, 397 F.2d 1006, 1009 (CCPA 1968)). What is important is that there is some evidence indicating that the knowledge was in the possession of one of ordinary skill in the art. *In re Bascom*, 230 F.2d 612, 614 (CCPA 1956) ("[T]he proper

inquiry should not be limited to the specific structure shown by the references, but should be into the concepts fairly contained therein.”).

#### D. ANALYSIS

We cannot agree that the broadest interpretation of claim 1 requires that *all* the polymerization must take place in a single reaction chamber. *Am. Acad. of Sci. Tech. Ctr.*, 367 F.3d at 1364. Claim 1 states that the “gas-phase fluidized-bed reactor . . . comprises . . . a single reactor chamber (1) in the form of a vertical tube . . .,” which means that the fluidized-bed reactor may include an additional reactor chamber (i.e., polymerization zone 2) or second reactor (30, 70) of different construction without falling outside the scope of the claim. *Vehicular Techs. Corp.*, 212 F.3d at 1383. In *Innovad, Inc. v. Microsoft Corp.*, 260 F.3d 1326, 1333 (Fed. Cir. 2001), as relied upon by the Appellants, the claim prescribed a specific function for the claimed “single....switch,” which was not met by the prior art. Appellants’ claim 1, however, ascribes only structural limitations to the “single reactor chamber,” (i.e., a region of transition, a reaction zone, and a calming zone). (*See* claim 1). Appellants do not contest these structural limitations read on the prior art polymerization zone 1. Likewise, one of ordinary skill in the art would have inferred that polymerization zone 1 is “a single reaction chamber,” as recited in claim 1. (FF 3-4). Accordingly, Appellants have not shown that the Examiner reversibly erred in construing the term “a single reactor chamber.”

We agree with the Examiner that line 3 (and corresponding lines 21 and 71 of Figs. 2 and 3) of Govoni, which extends from polymerization zone 1 to a separator 4, and the portion of line 3 between the upper portion of reaction chamber 1 and cyclone 3a, as disclosed in Appellants’ Specification, are equivalent features. These elements perform the exact same function, carrying

polymerized particles and excess gas from a reaction chamber 1 (polymerization zone 1) to a cyclone 3a (separator 4). (FF 1, 4). Since Appellants' Specification teaches no other output line for the polymer (FF 2), all of the polymer particles must be moved to the cyclone 3a via this portion of line 3, as with line 3 of the reactor disclosed in Govoni. (FF 4-5). Likewise, line 6 of Govoni and the portion of line 3 of Appellants' Specification downstream from cyclone 3a perform the same function, to transfer the excess gas removed from the separator 4 (cyclone 3a) back to polymerization zone 1 (reaction chamber 1). (FF 1 and 6). Thus, Govoni would have suggested to one of ordinary skill in the art a "circulating gas line" identical to that disclosed by Appellants and recited in claim 1.

Thus, Appellants have not shown that the Examiner erred in finding that line 3 and line 6 as taught by Govoni should be considered together to constitute the claimed "circulation gas line."

## II. Claim 16

### A. ISSUE ON APPEAL

Appellants argue that, if cylindrical line 65 and frustoconical section 62 are deemed to be part of the first reactor, "the first reactor would not consist essentially of a region of transition in the lower section of the tube, followed by a reaction zone, which is followed by a calming zone in the upper section of the tube," as recited in claim 16. (App. Br. 12). The Examiner responds so as to agree that frustoconical section 62 is the region of transition of the reactor as claimed. (Ans. 8).

To the best of our understanding, the arguments of Appellants and the Examiner raise the following second issue: does the "consisting essentially of"

language recited in claim 16 preclude having cylindrical line 65 and/or frustoconical section 62 constitute part of the reactor?

**B. FACTUAL FINDINGS**

No additional Findings of Fact are necessary to decide the above identified issue on appeal.

**C. PRINCIPLES OF LAW**

The “phrase ‘consisting essentially of’ limits the scope of a claim to the specified ingredients and those that do not *materially affect* the *basic* and *novel* characteristic(s) of a composition.” (emphasis added). *In re Herz*, 537 F.2d 549, 551-52 (CCPA 1976); *see also PPG Indus., Inc. v. Guardian Indus. Corp.*, 156 F.3d 1351, 1354 (Fed. Cir. 1998) (“By using the term “consisting essentially of,” the drafter signals that the invention necessarily includes the listed ingredients and is open to unlisted ingredients that do not materially affect the basic and novel properties of the invention.”).

In assessing a broadest reasonable claim construction wherein a potentially exclusionary “consisting essentially of” transitional phrase is involved, Appellants bear the burden of: (1) showing the basic and novel characteristics of their claimed invention, and (2) establishing how those characteristics would be materially changed by the presence of any component included in an applied reference but not recited as an element in the claims. *See In re DeLajarte*, 337 F.2d 870, 873-74 (CCPA 1964); *Ex parte Hoffman*, 12 USPQ2d 1061, 1063-64 (BPAI 1989).

**D. ANALYSIS**

Our review of the record reveals that Appellants have wholly failed to provide any evidence establishing that including a cylindrical line 65 and/or frustoconical section 62, as taught by Govoni, would materially change the

basic and novel characteristics of Appellants' invention. Consequently, Appellants' unsupported arguments fall significantly short of establishing that the "consisting essentially of" transitional phrase of claim 16 requires exclusion of either cylindrical line 65 or frustoconical section 62, or both. *DeLajarte*, 337 F.2d at 873-74 (CCPA 1964); *Hoffman*, 12 USPQ2d at 1063-64.

### III. Claim 4

#### A. ISSUE ON APPEAL

Appellants contend that, in relying on "gas distribution means 33" taught by Govoni to teach the "flow reshapers" of claim 4, the Examiner fails to address the fact that claim 4 depends from claims 1, which also requires either no gas distribution plate or a gas distribution plate with orifices covering more than 50% of the total surface area. The Examiner relies on the fact that the gas distributor plate would "shape flow homogeneously to the reaction bed" and that "a device having the claimed relative dimensions [i.e., orifice covering more than 50% of the total surface area] would not perform differently than the prior art device." (Ans. 4, 8-9).

Thus, a third issue on appeal arising from the contentions of Appellants and the Examiner is: have Appellants shown that the Examiner reversibly erred in finding the "gas distributor means 33" to be a flow reshaper within the meaning of claim 4?

#### B. FACTUAL FINDINGS

The following additional Findings of Fact are relevant to deciding the above identified issue on appeal:

7. Appellants' Specification describes a conventional "reactor plate" (i.e., a conventional gas distribution plate) as one that "spatially closes off the reaction chamber from the circulation gas line," that prevents "the polymer

particles flowing back into the circulation gas pipe,” and that “ensures uniform distribution of gas in the reaction chamber,” for example, a “narrow-mesh grid.” (Spec. 1:43-2:9).

8. Appellants’ Specification describes a flow reshaper as any “gas diversion devices” that “reshape the flow pulse of the incoming gas,” including “a wide mesh grid which is sited in the region of transition of the reaction gas from the circulation gas line into the reactor chamber in order to reshape the flow pulse of the incoming gas . . . .” (Spec. 3:9-17; 33-35).

9. Govoni describes “gas distributor means 33” as “a grid.” (Govoni, col. 6, ll. 11-12; col. 7, l. 60, col. 10, ll. 60-61).

10. Govoni states that “the feeding of the gas mixture is effected below the point of reintroduction of the polymer into said first zone 1 by the use, where appropriate, of gas distributor means, such as, for example, a distributor grid.” (Govoni, col. 6, ll. 9-11).

11. Govoni states that “[e]ven when using gas distributor means such as, for example, a grid, the transport gas velocities in the plenum below the grid are still high and such as to ensure the entrainment [i.e., the carrying along] of droplets of even considerable dimensions and of wetted polymer, without stagnant points.” (Govoni, col. 7, ll. 59-64).

12. Govoni does not disclose the mesh size of the grid it refers to as a “gas distribution means.” (*See generally* Govoni).

### C. PRINCIPLES OF LAW

During examination, “claims . . . are to be given their broadest reasonable interpretation consistent with the specification, and . . . claim language should be read in light of the specification as it would be interpreted by one of ordinary

skill in the art." *In re Am. Acad. of Sci. Tech. Ctr.*, 367 F.3d 1359, 1364 (Fed. Cir. 2004).

#### D. ANALYSIS

Claim 1 requires that the reactor chamber have either no gas distributor plate or a gas distributor plate having orifices which occupy more than 50% of the total surface area of the gas distributor plate. Claim 4, adds the limitation of “flow reshapers” that “reshape the flow pulse of the incoming gas” and “bring about substantially homogenous introduction of the gas flow into the fluidized bed.” Thus, claim 4 requires either (a) no gas distributor plate and flow reshapers; or (b) a gas distributor plate with orifices covering 50% of the total area and flow reshapers.

Claim 4 does not require the “flow reshaper” to have any particular shape. (*See* claim 4). Considering Appellants’ Specification (FF 8), we find that any device placed in the gas flow would impede and thus “reshape the flow pulse of the incoming gas” and contribute to homogeneity in the gas flow. Thus, any device may be a “flow reshaper” in the broadest reasonable interpretation of the term recited in claim 4. *Am. Acad. of Sci. Tech. Ctr.*, 367 F.3d at 1364.

Appellants’ Specification does little to distinguish between “a gas distributor plate” and “flow reshapers.” For example, Appellants consider narrow-mesh grids to be a conventional reactor plate and wide-mesh grids to be a flow reshaper. (FF 7-8). Yet, even a conventional reactor plate having a narrow-mesh would constitute a “flow reshaper” within the broadest reasonable interpretation of the term since it “ensures uniform distribution of gas in the reaction chamber.” (FF 7).



Considering that the mesh size of the grid in Govoni is not disclosed, we cannot find that the “gas distributor means 33,” by its terminology alone, reads on a “gas distributor plate” within the meaning of claim 1. (FF 9-12). However, despite the mesh size, the grid taught by Govoni would read on “flow reshapers” as required by claim 4. Thus, from the teachings of Govoni, it would have been obvious for one of ordinary skill in the art to have included flow reshapers in a fluidized bed reactor, whether or not there was a conventional or novel “gas distributor plate” present. Thus, the combination of no gas distributor plate and flow reshapers, option (a) of claim 4, would read on the teachings of Govoni.

Thus, Appellants have not shown that the Examiner reversibly erred in finding the “gas distributor means 33” to be a flow reshaper within the meaning of claim 4.

## II. Claims 7, 8, 21, and 22

### A. ISSUE ON APPEAL

Each of claims 7, 8, 21, and 22 include, either directly or indirectly, the limitation of “a closable flap situated in the region of transition from the circulation gas line into the lower section of the reactor chamber which flap is adapted to prevent the penetration of polymer particles into the circulation gas line when the compressor is switched off.”

Appellants generally contend that the Examiner has not provided a reason to combine the teachings of Govoni and Lubbock. (App. Br. 13). The Examiner has indicated that “[i]t would have been obvious to one of ordinary skill in the art at the time the invention was made to use the slide valve of Lubbock in the area where the circulation gas inlet (65) and the reactor (60)

connect in order to control the amount of particles which would fall through the grid and into the circulation line.” (Ans. 5).

An issue on appeal arising from the contentions of Appellants and the Examiner is: did the Examiner reversibly err in combining the teachings of Govoni and Lubbock to arrive at the invention of claims 7, 8, 21, and 22?

#### B. FACTUAL FINDINGS

The following additional Findings of Fact are relevant to deciding the above identified issue on appeal:

13. Lubbock teaches a valve for use when large quantities of a catalyst are fed in air or other vaporous medium so that it behaves much like a fluid. (Lubbock, col. 1, ll. 9-15).

14. The valve of Lubbock is designed to expose a minimum area of the valve to erosion as the solid catalyst particles move through the valve, so that the volume of material flowing through the valve is maintained. (Lubbock, col. 1, 45-51; col. 2, ll. 15-17)

15. Govoni does not describe a catalyst feed 32/34, 66 entering the reaction chamber in the same location as the gas recycle feed 36, 81. (*See generally*, Govoni; Figures 2 and 3).

#### C. PRINCIPLES OF LAW

Rejections based on § 103(a) must rest on a factual basis with these facts being interpreted without hindsight reconstruction of the invention from the prior art. *See KSR Int'l Co. v. Teleflex, Inc.*, 127 S. Ct. 1727, 1741 (2007) (“[I]t can be important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does.”); *In re Rouffet*, 149 F.3d 1350, 1358 (Fed. Cir. 1998) (“hindsight” is inferred when the specific understanding or principal

within the knowledge of one of ordinary skill in the art leading to the modification of the prior art in order to arrive at appellant's claimed invention has not been explained).

#### D. ANALYSIS

Applying the preceding legal principles to the Factual Findings in the record of this appeal, we determine that the Examiner has not established a prima facie case of obviousness.

Lubbock is directed to reducing the erosion caused by the flow of a solid catalyst in a gas through the valve. (FF 13-14). Thus, even if one of ordinary skill in the art would have a need to place the valve of Lubbock at a catalyst input, the catalyst input taught by Govoni is not in the same place where the circulating gas line connects with the lower section of the reactor chamber, as required by claims 7, 8, 21, and 22. (FF 15). Further, the Examiner has provided no evidence that the valve of Lubbock would function “to prevent the penetration of polymer particles into the circulation gas line when the compressor is switched off” as claimed. Lubbock is directed to the flow of materials in only one direction during operation. (FF 13-14). Lubbock does not address materials flowing in the opposite direction.

Further, the Examiner states that the motivation to include the valve of Lubbock is “to control the amount of particles which would fall through the grid and into the circulation line.” (Ans. 5). Yet, neither Govoni nor Lubbock discusses particles moving in an opposite direction to the gas flow. Thus, the Examiner does not explain why one of ordinary skill in the art would need to control particles falling in a direction opposite to the direction of gas flow without the hindsight of Appellants’ Specification explaining that such occurs

when the gas flow is turned off. *KSR*, 127 S. Ct. at 1741; *Rouffet*, 149 F.3d at 1358.

Thus, the Examiner reversibly erred in combining the teachings of Govoni and Lubbock to arrive at the invention of claims 7, 8, 21 and 22.

#### IV. CONCLUSION

For the reasons discussed above, we sustain the Examiner's rejection under 35 U.S.C. § 103(a) of claims 1, 3, 4, 6, 10, 16, 18-20, and 23 over Govoni, and we cannot sustain the Examiner's rejection under 35 U.S.C. § 103(a) of claims 7, 8, 21, and 22 over Govoni in view of Lubbock.

#### V. DECISION

We affirm-in-part the Examiner's decision.

#### VI. TIME PERIOD FOR RESPONSE

No time period for taking any subsequent action in connection with this appeal maybe extended under 37 C.F.R. § 1.136(a)(1)(v)(2008).

#### AFFIRMED-IN-PART

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